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# DICTIONARY OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

Second Edition

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and basophils, and is reactions. *Aka*  $\gamma$ E. factor.

ant human immunoglobulins about 80% of the globulins, has a sedimentation coefficient of 6.5-7.0S and a molecular weight of 100,000, contains about 10% complement, and aids in phagocytosis, immunoglobulin produced in immune response. *Aka*

bulin that constitutes serum immunoglobulin with a sedimentation coefficient of 19S, (MW 950,000), contains 10% complement, is very efficient in that it does not cross the blood-brain barrier. It is the most type of antibody against an antigen (primary response) efficiently being sites; it is found in serum. *Aka*  $\gamma$ M.

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The process where-into recipient requires no homol-recipient DNA.

f a substance into a port system that is tance; the transport compound, where the transported, is an

adv Intramuscular-

of cancer according t evolve systems of arises when there on, and the imba- passes a certain

aid by a substance, a colloidal system. dose.

icyclic ring system . *Aka* imidazolium

l that contains the

**imine-enamine tautomerism** The tautomerism that is due to a shift of a hydrogen atom so that one of the isomers is an imine and the other is an enamine.

**imino acid** An acid derived from an imine; proline and hydroxyproline are alpha imino acids in which the nitrogen of the imino group and the carboxyl group are attached to the same carbon atom.

**imino group** The grouping  $-\text{NH}-$ .

**2-iminothiolane** A cross-linking reagent that forms a covalent bridge between two epsilon amino groups of lysine residues in a protein.

**immediate early RNA** PREEARLY RNA.

**immediate-type hypersensitivity** An allergic response that occurs soon, generally within a few minutes, after the administration of an antigen to an animal organism; the response is mediated by circulating antibodies. *See also* anaphylaxis; type 2 reaction; type 3 reaction.

**immersion oil** An oil that has a refractive index of about 1.52 and that is used with an oil immersion objective in microscopy.

**immiscible** Incapable of being mixed.

**immobile phase** STATIONARY PHASE (2).

**immobilized enzyme** An enzyme that is physically confined while it carries out its catalytic function. This may occur naturally, as in the case of particulate enzymes, or it may be produced artificially by chemical or by physical methods. In the chemical methods, the enzyme is linked covalently to a support. These methods include attachment of the enzyme to a water-insoluble support, incorporation of the enzyme into a growing polymer chain, or cross-linking of the enzyme with a multifunctional low molecular weight reagent. In the physical methods, the enzyme is not linked covalently to a support. These methods include adsorption of the enzyme to a water-insoluble matrix, entrapment of the enzyme within either a water-insoluble gel or a microcapsule, or containment of the enzyme within special devices equipped with semipermeable membranes.

**immune** Of, or pertaining to, an organism that has been immunized.

**immune adherence** The attachment of a complex, composed of particulate antigens, antibodies, and complement, to the surfaces of nonsensitized particles such as erythrocytes, platelets, yeast, or starch granules.

**immune adsorbent** *See* immunoadsorbent.

**immune antibody** ACQUIRED ANTIBODY.

**immune clearance** IMMUNE ELIMINATION.

**immune competent cell** *See* immunocompetent cell.

**immune complex** ANTIGEN-ANTIBODY COMPLEX.

**immune conglutination** A conglutination reaction caused by an immunconglutinin.

**immune conglutinin** *See* immunconglutinin.

**immune cytotoxicity** The lysis of cells by antibodies in the presence of complement.

**immune deficiency diseases** A group of diseases linked to deficiencies in the immune system. Thus, for example, a deficiency of either purine nucleoside phosphorylase or adenosine deaminase leads to a decrease in the number of lymphocytes. *See also* AIDS.

**immune elimination** The stage in an immune response during which the antigen is rapidly removed from the blood as a result of its combination with the antibody.

**immune globulin** *See* immunoglobulin.

**immune hemolysis** Hemolysis that results from complement fixation.

**immune lysis** IMMUNE CYTOLYSIS.

**immune opsonin** *See* opsonin.

**immune reaction** The reaction between a specific antigen and an antibody.

**immune response** The formation of antibodies in an animal organism in response to an immunization and the reactions of these antibodies with the antigens used in the immunization; may involve humoral immunity or cell-mediated immunity.

**immune response gene** A gene that controls the ability of lymphocytes to produce an immune response upon stimulation by specific antigens. *Abbr* Ir gene.

**immune serum** (*pl* immune sera). ANTISERUM.

**immune surveillance theory** *See* immunological surveillance theory.

**immunity** 1. The resistance of an individual or an animal to a specific disease, infecting agent, or toxic antigen. 2. The capacity of lysogenic bacteria to withstand infection by phage particles that are of the same kind as the prophage of the bacteria.

**immunity substance** A cytoplasmic factor that is formed under the control of a phage gene and that confers immunity on a lysogenic bacterium against infection by a phage of the same type as its prophage. The immunity substance also functions as a repressor of the vegetative replication of the prophage in that bacterium.

**immunization** 1. The administration of an antigen to an animal organism to stimulate the production of antibodies by that organism. 2. The administration of antigens, antibodies, or lymphocytes to an animal organism to produce the corresponding active, passive, or adoptive immunity.

**immuno-** Combining form meaning immunology.

**immun adsorbent** An insoluble material that is used for the purification of antibodies by adsorbing them from a serum; a gel for trapping antibodies, or an inert solid, to which

either antigens or haptens have been covalently linked, are two examples.

**immunoassay** An assay that utilizes antigen-antibody reactions for the determination of biochemical substances.

**immunoblast** A blast cell that is a forerunner of an immunocyte.

**immunochemistry** The science that deals with the chemical aspects of immunology and combines the techniques of biochemistry and immunology.

**immunochromatography** IMMUNO-GEL FILTRATION.

**immunocompetent cell** A cell that has the capacity to recognize antigens and/or to synthesize antibodies.

**immunoconglutinin** An antibody that is specific for antigenic determinants which are exposed in fixed complement, but which are unavailable for reaction in free complement. *See also* conglutinin.

**immunocore electrophoresis** A separation technique that is based on the combined use of electrophoresis and immunodiffusion. Antigens or antibodies are first separated by disc gel electrophoresis, and the gel column is then extruded. A core of the gel column is removed and replaced with either an antiserum or a solution containing antigens. Following this, the gel is incubated to allow for the formation of precipitin bands of antigen-antibody complexes.

**immunocyte** 1. IMMUNOCOMPETENT CELL. 2. An immunocompetent lymphocyte.

**immunocyte adherence** A technique for detecting cells that carry antibodies on their surfaces either because they produce the antibodies or because the antibodies have become bound to the cells. The cells are reacted with the corresponding antigens or with other cells that are coated with soluble antigens. An antibody-bearing cell binds the antigens and forms a rosette-type structure, and the number of these rosettes is then determined microscopically. *Aka* rosette technique.

**immunodeficiency** *See* immune deficiency diseases.

**immunodiffusion** A method for carrying out the precipitin reaction in a gel that is based on the diffusion of antibody and/or antigen molecules through the gel. *See also* double diffusion; single diffusion.

**immunodominant** 1. Descriptive of that part of an antigenic determinant that binds most strongly to the antibody. 2. Descriptive of that part of the antigenic determinant that elicits the greatest immune response.

**immunoelectroadsorption** A method for measuring antibody concentrations in serum. A layer of the appropriate antigens is ad-

sorbed onto a glass slide with the aid of an electrical current, and the antibodies in the given serum are then adsorbed onto the antigens. The thickness of the antibody layer is determined and it provides a measure of the antibody concentration in the serum.

**immunoelectrofocusing** One of several separation techniques that are based on the combined use of gel electrophoresis and either immunodiffusion or immunoelectrophoresis; performed by incorporating either all or fractions of the gel from a gel electrophoresis experiment into a gel to be used for either immunodiffusion or immunoelectrophoresis.

**immunoelectronmicroscopy** The use of electron microscopy in conjunction with immunochemical methods, as in the staining of electron microscope specimens with ferritin-labeled antibodies.

**immunoelectrophoresis** A technique for identifying antigens in complex mixtures by first separating the antigens in one dimension by means of gel electrophoresis, and then allowing them to react with antibodies by means of two-dimensional double diffusion through the gel; a pattern of precipitin arcs is thereby produced. *Abbr* IE.

**immunoenzymometric assay** A variation of an enzyme immunoassay that is based on the use of enzyme-labeled antibodies. *Abbr* IEMA. *See also* ELISA.

**immunoferritin** FERRITIN-LABELED ANTIBODY.

**immunofiltration** The purification of an immunological solution by passing it through an immunoadsorbent.

**immunofluorescence** *See* direct fluorescent antibody technique; indirect fluorescent antibody technique; anticomplement fluorescent antibody technique.

**immunofluorometric assay** A variation of a fluorimetric assay that is based on the use of antibodies labeled with a fluorochrome. *Abbr* IFMA.

**immuno-gel filtration** A separation technique that is based on the combined use of immunodiffusion and thin-layer gel filtration.

**immunogen** 1. ANTIGEN. 2. A substance capable of producing an immune response that leads to the synthesis of antibodies.

**immunogenetics** The branch of immunology that deals with the interrelations of immunological reactions and the genetic makeup of an organism.

**immunogenic** Capable of producing an immune response.

**immunogenicity** ANTIGENICITY.

**immunoglobulin** 1. A protein of animal origin that has a known antibody activity. 2. A protein that is closely related to an antibody by its chemical structure and by its antigenic spe-

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